

Appl. No. 10/735,373
Amdt. Dated 4 August 2005
Reply to Office Action of 7 March 2005

Attorney Docket No. 26.0263 US

Page 2 of 6

This listing of claims will replace all prior version, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A method of preparing an acoustic tool ~~(102)~~ having at least one monopole source for borehole logging comprising calibrating a plurality of acoustic receivers ~~(112)~~ with the plurality of acoustic receivers ~~(112)~~ mounted to the acoustic tool ~~(102)~~.
2. (currently amended) The method of claim 1, further comprising:
 - inserting the tool into an acoustic chamber ~~(104)~~;
 - generating acoustic waves in the acoustic chamber ~~(104)~~;
 - averaging waveforms ~~(156)~~ received by each of the plurality of acoustic receivers to create an average waveform ~~(176)~~ associated with each of the plurality of acoustic receivers ~~(112)~~;
 - assigning one average waveform as a reference waveform;
 - calculating compensation factors for one or more of the plurality of receivers ~~(112)~~.
3. (original) The method of claim 2, wherein the calculating comprising measuring differences between the reference waveform and one or more of the remaining average waveforms.
4. (original) The method of claim 2, wherein the calculating comprises computing three gain and three time delay compensation factors for each of the plurality of receivers, one for each of a low, mid, and high frequency range.
5. (original) The method of claim 2, wherein the generating further comprises generating acoustic waves in each of at least two different axially rotated positions.

Appl. No. 10/735,373
Amdt. Dated 4 August 2005
Reply to Office Action of 7 March 2005

Attorney Docket No. 26.0263 US

Page 3 of 6

6. (original) The method of claim 5, wherein the at least two different axially rotated positions comprise four positions offset by approximately ninety degrees.

7. (currently amended) The method of claim 2, further comprising calculating compensation factors for each of the plurality of receivers ~~(112)~~ except for a reference receiver

8. (currently amended) An acoustic tool calibration system comprising:
an acoustic tool ~~(102)~~ comprising at least one monopole source and a plurality of receivers ~~(112)~~ mounted thereon;
an acoustic chamber ~~(104)~~ receptive of the acoustic tool ~~(102)~~;
a plurality of spacers ~~(106)~~ arranged about the acoustic tool ~~(102)~~ to support the acoustic tool ~~(102)~~ substantially concentric with the acoustic chamber ~~(104)~~;
a computer ~~(150)~~ in communication with the acoustic tool ~~(102)~~;
a set of instructions executable by the computer ~~(150)~~ that, when executed, automatically calibrates each of the plurality of receivers ~~(112)~~ while the receivers ~~(112)~~ are mounted on the acoustic tool ~~(102)~~.

9. (currently amended) The system of claim 8, further comprising multiple receiver stations spaced axially along the acoustic tool ~~(102)~~, wherein each of the multiple receiver stations comprises a plurality of azimuthally arranged receivers ~~(112)~~.

10. (currently amended) The system of claim 8, wherein the acoustic chamber ~~(104)~~ is pressurized to at least 300 psi.

11. (new) The system of claim 8, wherein the acoustic tool comprises an upper and a lower monopole source.